

# REQUEST FOR ACCESS OF ABANDONED APPLICATION UNDER 37 CFR 1.14(i)

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In re Application of	
Application Number <b>07-967622</b>	File <b>10-28-92</b>
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Paper No. **#25**

I hereby request access under 37 CFR 1.14(a)(3)(iv) to the application file record of the above-identified ABANDONED application, which is: (CHECK ONE)

- \_\_\_ (A) referred to in United States Patent Number **5851832**, column \_\_\_
- \_\_\_ (B) referred to in an application that is open to public inspection as set forth in 37 CFR 1.11, i.e., Application No. \_\_\_\_\_, filed \_\_\_\_\_, on page \_\_\_\_\_ of paper number \_\_\_\_\_
- \_\_\_ (C) an application that claims the benefit of the filing date of an application that is open to public inspection, i.e., Application No. \_\_\_\_\_, filed \_\_\_\_\_, or
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US005851832A

**United States Patent** [19]

Weiss et al.

[11] Patent Number: **5,851,832**[45] Date of Patent: **Dec. 22, 1998****[54] IN VITRO GROWTH AND PROLIFERATION OF MULTIPOTENT NEURAL STEM CELLS AND THEIR PROGENY**

[75] Inventors: Samuel Weiss; Brent Reynolds, both of Alberta, Canada; Joseph P. Hummang; E. Edward Baetge, both of Barrington, R.I.

[73] Assignee: Neurospheres, Ltd., Canada

[21] Appl. No.: 486,648

[22] Filed: Jun. 7, 1995

**Related U.S. Application Data**

[63] Continuation-in-part of Ser. No. 270,412, Jul. 5, 1994, abandoned, which is a continuation of Ser. No. 226,812, Jul. 8, 1991, abandoned, and a continuation-in-part of Ser. No. 385,404, Feb. 7, 1995, abandoned, which is a continuation of Ser. No. 961,813, Oct. 16, 1992, abandoned, which is a continuation-in-part of Ser. No. 226,812, and Ser. No. 359,945, Dec. 20, 1994, abandoned, which is a continuation of Ser. No. 221,655, Apr. 1, 1994, abandoned, which is a continuation of Ser. No. 967,622, Oct. 28, 1992, abandoned, which is a continuation-in-part of Ser. No. 226,812, Jul. 8, 1991, abandoned, and Ser. No. 376,062, Jan. 20, 1995, abandoned, which is a continuation of Ser. No. 10,829, Jan. 29, 1993, abandoned, which is a continuation-in-part of Ser. No. 226,812, and Ser. No. 149,508, Nov. 9, 1993, abandoned, which is a continuation-in-part of Ser. No. 226,812, and Ser. No. 311,099, Sep. 23, 1994, abandoned, which is a continuation-in-part of Ser. No. 226,812, and Ser. No. 338,730, Nov. 14, 1994, abandoned, which is a continuation-in-part of Ser. No. 226,812.

[51] Int. Cl.<sup>6</sup> ..... C12N 5/06; C12N 5/08; C12N 5/02

[52] U.S. Cl. .... 435/368; 435/325; 435/366; 435/383; 435/384

[58] Field of Search ..... 435/340.2, 325, 435/366, 368, 377, 383, 384

**[56] References Cited****U.S. PATENT DOCUMENTS**

4,753,635	6/1988	Sagen et al.	604/49
4,981,174	12/1990	Sagen et al.	424/563
5,082,670	1/1992	Gage	424/520
5,175,103	12/1992	Lee et al.	435/1723
5,411,883	5/1995	Boss et al.	435/29
5,612,211	3/1997	Wilson et al.	435/378

**FOREIGN PATENT DOCUMENTS**

0 233 838	8/1987	European Pat. Off.
89/03872	5/1989	WIPO
90/06757	6/1990	WIPO
91/12003	2/1991	WIPO
91/09936	7/1991	WIPO
91/17242	11/1991	WIPO
93/01275	1/1993	WIPO
93/09802	5/1993	WIPO
94/03199	2/1994	WIPO

**OTHER PUBLICATIONS**

Almazan et al., "Epidermal Growth and Nerve Growth Hormone Stimulate Differentiation and Myelination of Brain Cell Aggregates in Culture," *Developmental Brain Research*, 21:257-264 (1985).

Anchan et al., "Trophic Factors Influence Proliferation of Germinal Neuroepithelial Cells of the Retina," *J. Cell Biol.*, 109:58a, Abstract No. 308 (1989).

Anchan et al., "EGF and TGF- $\alpha$  Stimulate Retinal Neuroepithelial Cell Proliferation in Vitro," *Neuron*, 6(6):923-936 (1991).

Bayer et al., "Neuron production in the Hippocampus and olfactory bulb of the adult rat Brain: addition or replacement?", *Annals NY Acad. Sci.* 457:163-172 (1985).

Björklund et al., "Neural Grafting in Animal Models of Neurodegenerative Diseases," *Ann. New York Acad. Sci.*, 457:53-81 (1985).

Bouvier et al., "Basic Fibroblast Growth Factor (bFGF) Promotes the Survival and Proliferation of Mesencephalic Neuronal Precursors in Vitro," *Society for Neuroscience Abstracts*, vol. 18, Abstract No.: 403.7 (1992).

Boyles et al., "Accumulation of Apolipoproteins in the Regenerating and Remyelinating Mammalian Peripheral Nerve," *J. Biol. Chem.*, 265(29):17805-17815 (1990).

Calof et al., "Analysis of Neurogenesis in a Mammalian Neuroepithelium: Proliferation and Differentiation of an Olfactory Neuron Precursor in Vitro," *Neuron*, 3:115-127 (1989).

Cattaneo et al., "Identifying and Manipulating neuronal stem cells," *TINS*, 14(8): 338-340 (1991).

Cattaneo et al., "Proliferation and differentiation of neuronal stem cells regulated by nerve growth factor," *Nature*, 347:762-765 (1990).

Cepko "Immortalization of neural cells via retrovirus-mediated oncogene transduction," *Ann. Rev. Neurosci.*, 12:47-65 (1989).

Delvalme et al., "Establishment of Pure Neuronal Cultures From Fetal Rat Spinal Cord and Proliferation of the Neuronal Precursor Cells in the Presence of Fibroblast Growth Factor," *Journal of Neuroscience Research*, 29:499-509 (1991).

Dunnett et al., "Dopamine-rich transplants in experimental Parkinsonism," *TINS*, 266-270 (Jul. 1983).

Emerich et al., "Behavioral Effects of Neural Transplantation," *Cell Transplantation*, 1:1-27 (1992).

Isaiah et al., "Rapid uptake of tyrophostin into A431 human epidermoid cells is followed by delayed inhibition of epidermal growth factor (EGF)-stimulated EGF receptor tyrosine kinase activity," *Mol. Cell Biol.* 11(5):2697-2703 (1991).

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**[57] ABSTRACT**

A method for the in vitro proliferation and differentiation of neural stem cells and stem cell progeny comprising the steps of (a) isolating the cells from a mammal, (b) exposing the cells to a culture medium containing a growth factor, (c) inducing the cells to proliferate, and (d) inducing the cells to differentiate is provided.

80 Claims, 3 Drawing Sheets